

CONTACT CAPPING LOCAL INTERCONNECT

Abstract of the Disclosure

A method and structure for forming a metallic capping interface between damascene conductive wires/studs and damascene conductive wiring line structures. The method forms a first insulative layer on a substrate layer, followed by forming damascene conductive wires/studs in the first insulative layer. A lower portion of each damascene conductive wire/stud is in contact with an electronic device (e.g., a field effect transistor), or a shallow trench isolation, that is within the substrate layer. A top portion of the first insulative layer is removed, such as by etching, such that an upper portion of the damascene conductive wires/studs remain above the first insulative layer. A metallic capping layer is formed on the upper portions of the damascene conductive wires/studs such that the metallic capping layer is in conductive contact with the damascene conductive wires/studs. Portions of the metallic capping layer between the damascene conductive wires/studs are removed to form a metallic cap on each damascene conductive wire/stud and to conductively isolate one or more of the damascene conductive wires/studs. A portion of the metallic capping layer may be removed from a particular damascene conductive wire/stud such that no metallic capping material remains conductively coupled to the particular damascene conductive wire/stud. A second insulative layer is formed on the first insulative layer such that the second insulative layer covers the metallic caps. Damascene conductive wiring lines are formed within the second insulative layer above the metallic caps and are conductively coupled to the metallic caps.